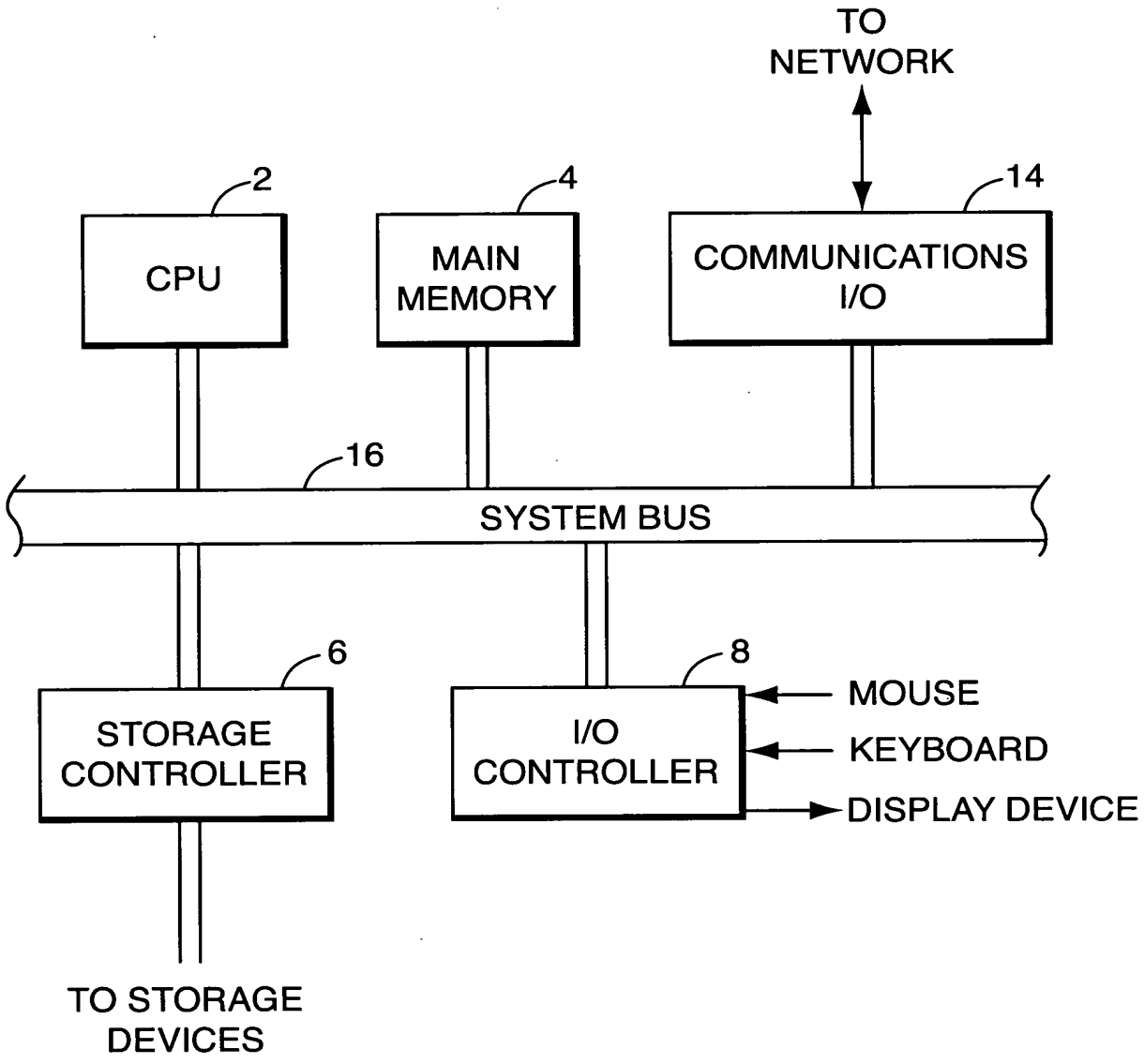
TO
NETWORK
2
4
14
CPU
MAIN
MEMORY
COMMUNICATIONS
I/O
16
SYSTEM BUS
6
8
STORAGE
CONTROLLER
I/O
CONTROLLER
MOUSE
KEYBOARD
DISPLAY DEVICE
TO STORAGE
DEVICES

FIG. 1

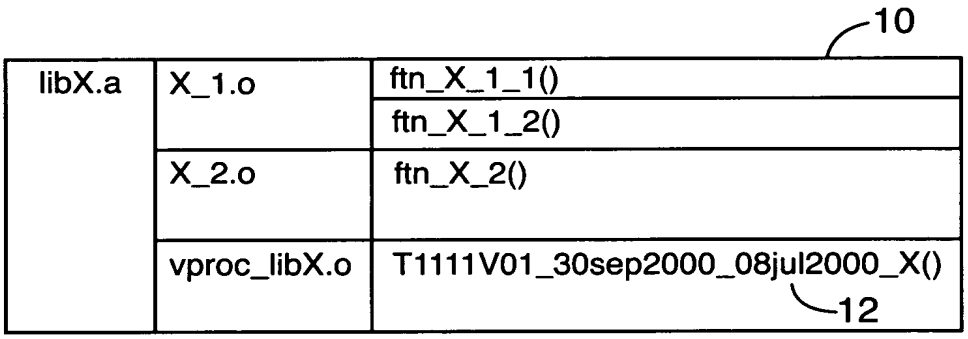
10
libX.a
X_1.o
ftn_X_1_1()
ftn_X_1_2()
X_2.o
ftn_X_2()
vproc_libX.o
T1111V01_30sep2000_08jul2000_X()
12

FIG. 2

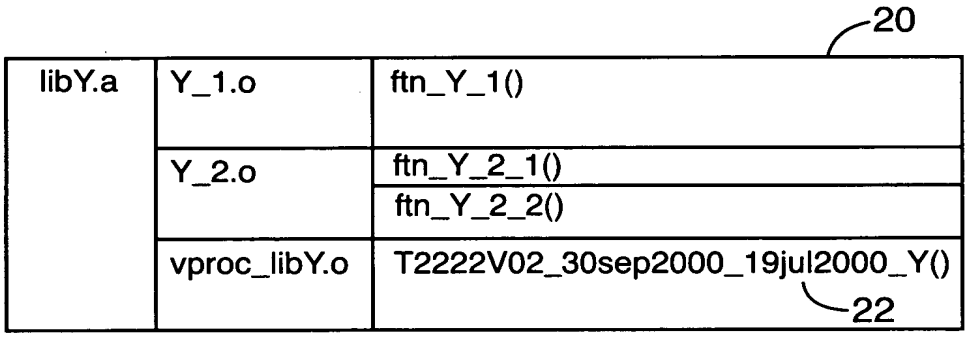
20
libY.a
Y_1.o
ftn_Y_1()
Y_2.o
ftn_Y_2_1()
ftn_Y_2_2()
vproc_libY.o
T2222V02_30sep2000_19jul2000_Y()
22

FIG. 3

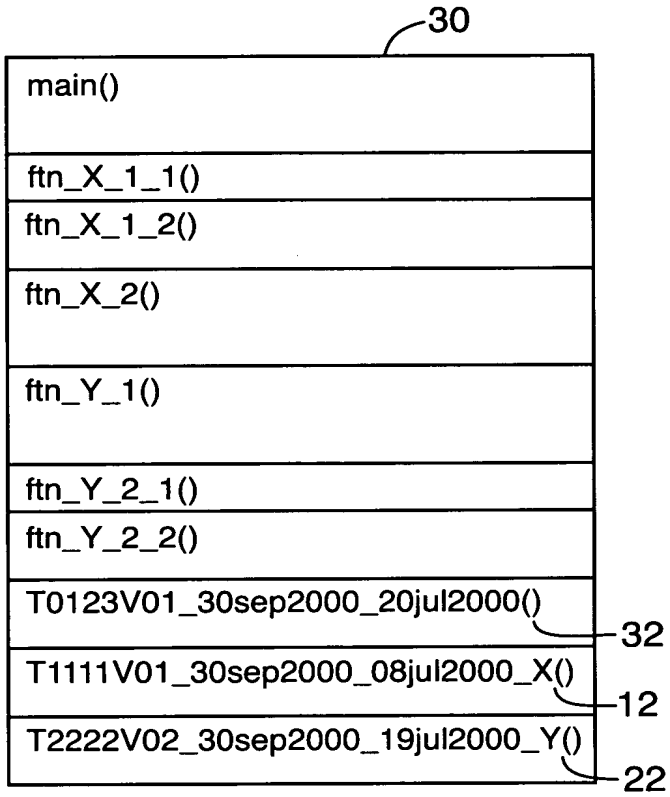

FIG. 4

```
/usr/bin/prog_a
GMT Binder timestamp:  21JUL2000 17:18:06
     Version procedure:  T0123V01_30SEP2000_20Jul2000
     Version procedure:  T1111V01_30SEP2000_09Jul2000_X
     Version procedure:  T2222V02_30SEP2000_19Jul2000_Y
     Version procedure:  T8432D44_01DEC97_CRTLMAIN
          Native Mode:  runnable file
```

40

FIG. 5

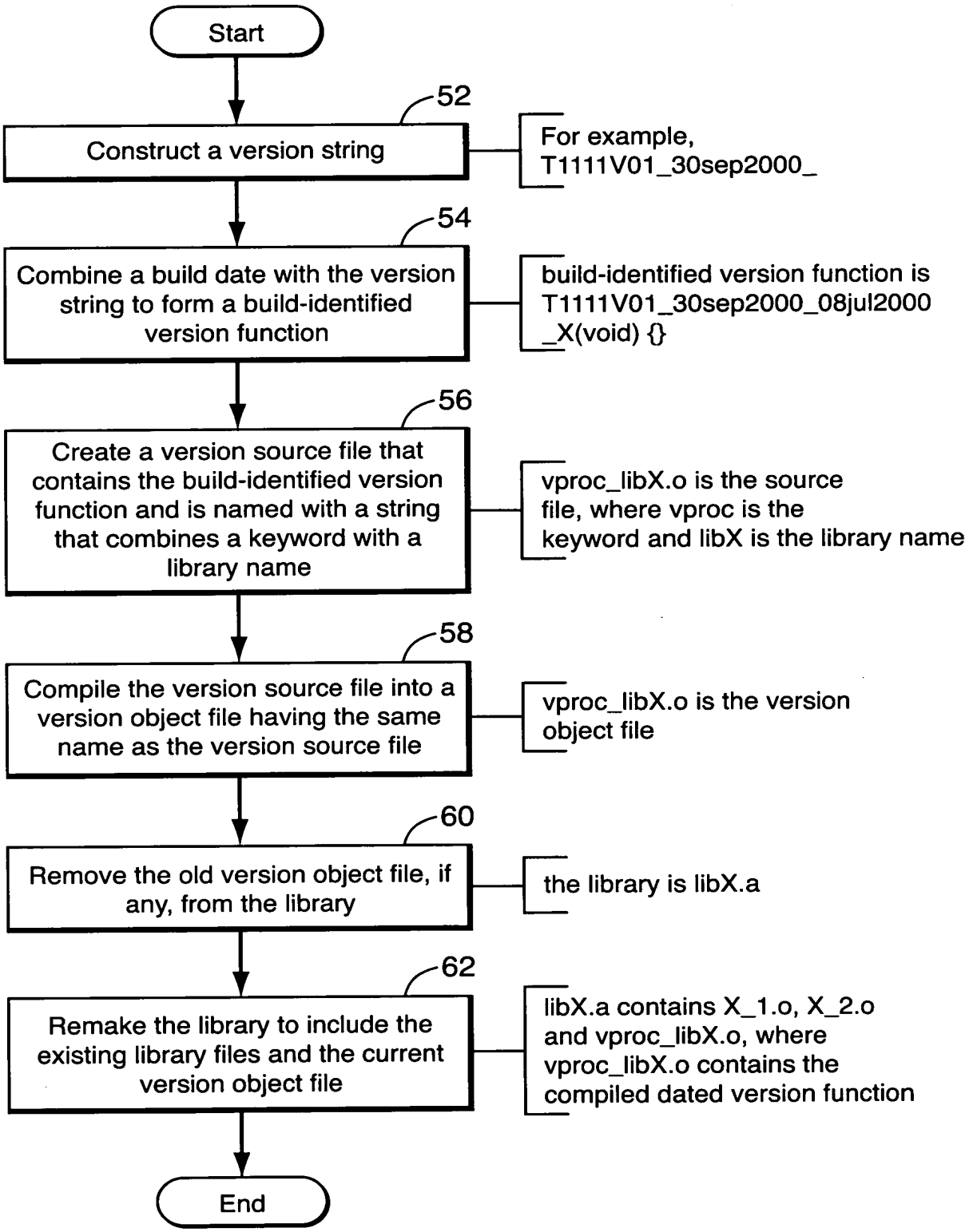
Start
52
Construct a version string
For example, T1111V01_30sep2000_
54
Combine a build date with the version string to form a build-identified version function
build-identified version function is T1111V01_30sep2000_08jul2000 _X(void) {}
56
Create a version source file that contains the build-identified version function and is named with a string that combines a keyword with a library name
vproc_libX.o is the source file, where vproc is the keyword and libX is the library name
58
Compile the version source file into a version object file having the same name as the version source file
vproc_libX.o is the version object file
60
Remove the old version object file, if any, from the library
the library is libX.a
62
Remake the library to include the existing library files and the current version object file
libX.a contains X_1.o, X_2.o and vproc_libX.o, where vproc_libX.o contains the compiled dated version function
End

FIG. 6

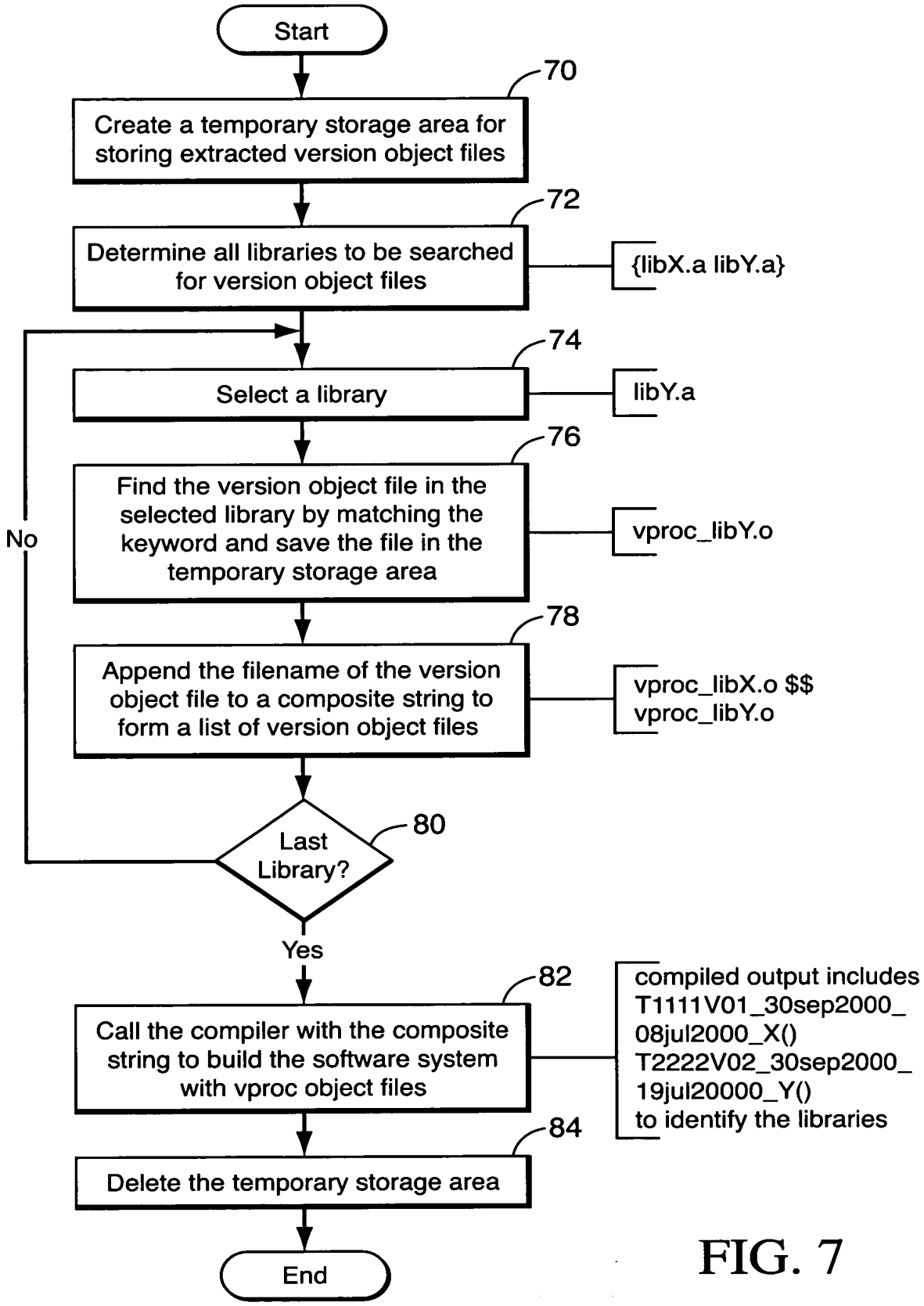
Start
70
Create a temporary storage area for storing extracted version object files
72
Determine all libraries to be searched for version object files
{libX.a libY.a}
74
Select a library
libY.a
76
Find the version object file in the selected library by matching the keyword and save the file in the temporary storage area
vproc_libY.o
78
Append the filename of the version object file to a composite string to form a list of version object files
vproc_libX.o $$ vproc_libY.o
Last Library?
80
No
Yes
82
Call the compiler with the composite string to build the software system with vproc object files
compiled output includes T1111V01_30sep2000_08jul2000_X() T2222V02_30sep2000_19jul20000_Y() to identify the libraries
84
Delete the temporary storage area
End

FIG. 7

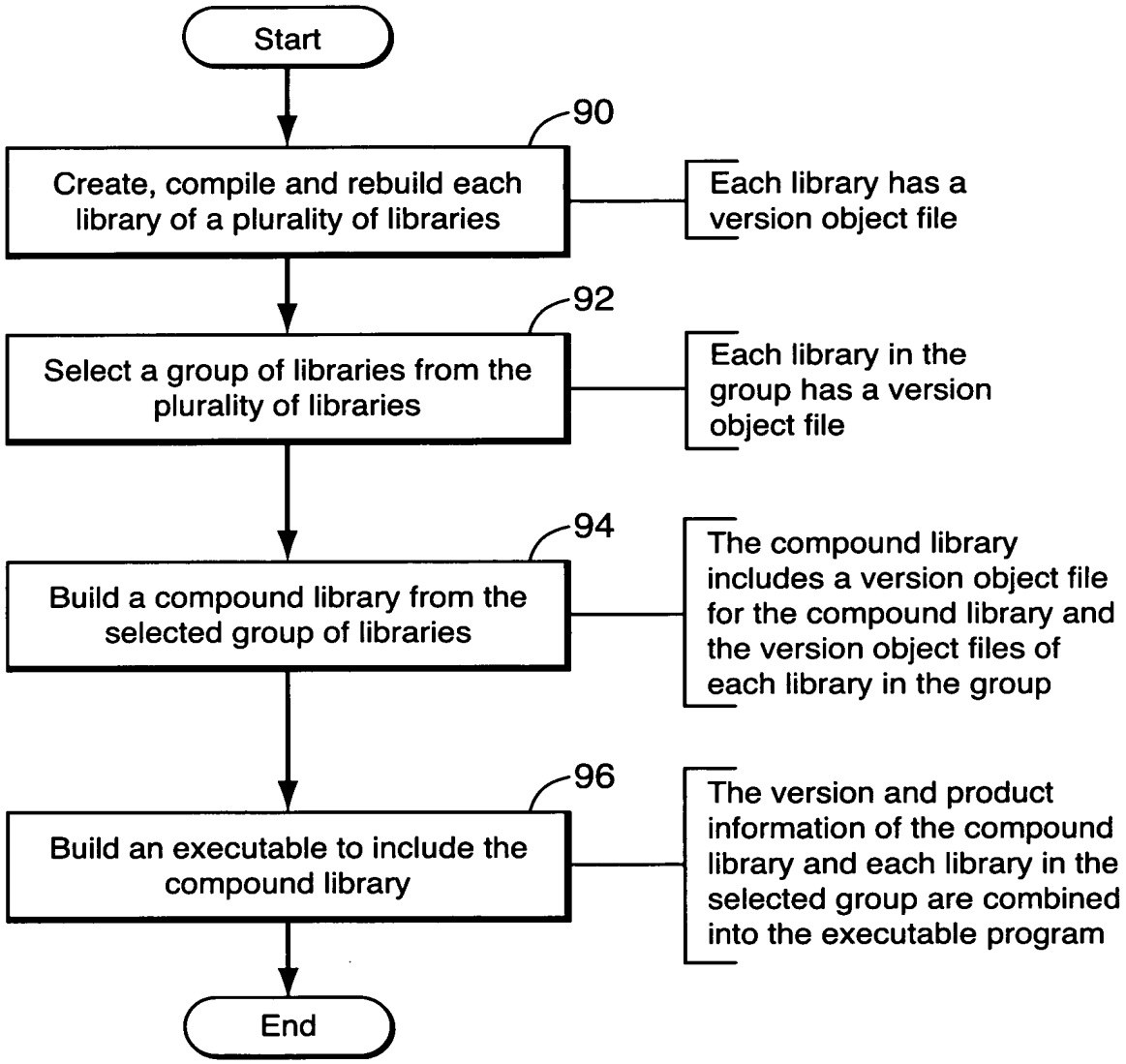
Start
90
Create, compile and rebuild each library of a plurality of libraries
Each library has a version object file
92
Select a group of libraries from the plurality of libraries
Each library in the group has a version object file
94
Build a compound library from the selected group of libraries
The compound library includes a version object file for the compound library and the version object files of each library in the group
96
Build an executable to include the compound library
The version and product information of the compound library and each library in the selected group are combined into the executable program
End

FIG. 8

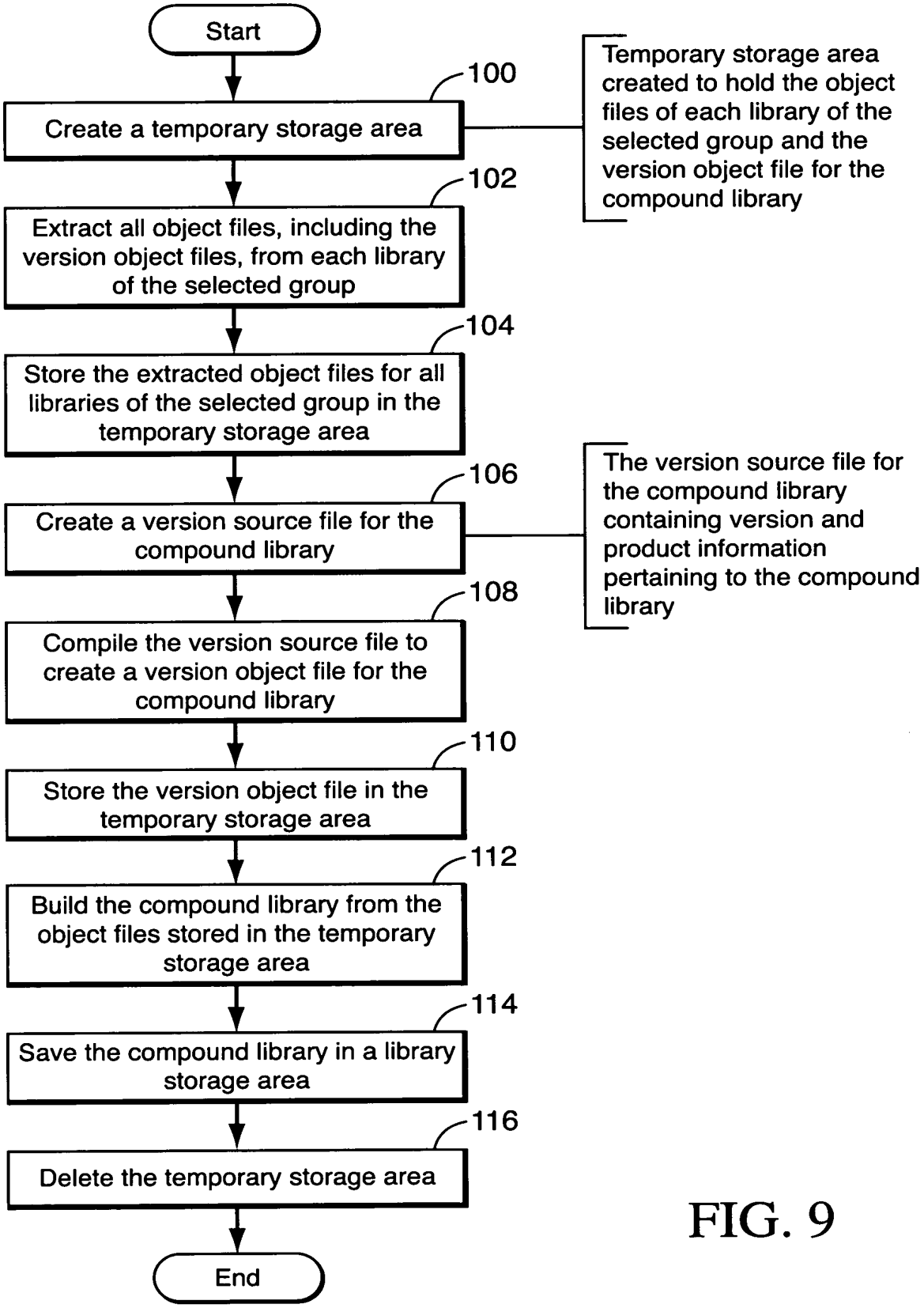
Start
100
Create a temporary storage area
Temporary storage area created to hold the object files of each library of the selected group and the version object file for the compound library
102
Extract all object files, including the version object files, from each library of the selected group
104
Store the extracted object files for all libraries of the selected group in the temporary storage area
106
Create a version source file for the compound library
The version source file for the compound library containing version and product information pertaining to the compound library
108
Compile the version source file to create a version object file for the compound library
110
Store the version object file in the temporary storage area
112
Build the compound library from the object files stored in the temporary storage area
114
Save the compound library in a library storage area
116
Delete the temporary storage area
End

FIG. 9